

12) $10v^2 + 49v + 18$

Vertex $\left(\frac{-b}{2a}, y\right)$ $\left(\frac{-49}{2(10)}, y\right)$ $\left(-\frac{49}{20}, y\right)$

$y = (2v + 9)(5v + 2)$ $(5v + 2)(2v + 9)$

x-int: $\left(\frac{-9}{2}, 0\right)$ $\left(\frac{-2}{5}, 0\right)$

$0 = (2v + 9)(5v + 2)$ solutions
zeros

$2v + 9 = 0$

$2v = -9$
 $v = -\frac{9}{2}$

$5v + 2 = 0$

$5v = -2$
 $v = -\frac{2}{5}$

$\left(\frac{x\text{-int} + x\text{-int}}{2}, y\right)$

Notes: Radical "√" Square Root

Examples:

$$5x^2 + 17 = 32$$

$$\begin{array}{r} -17 \quad -17 \\ \hline 5x^2 = 15 \end{array}$$

$$x^2 = 9$$

$$3^2 = 9$$

$$(-3)^2 = 9$$

x = ?

$$\frac{5x^2}{5} = \frac{15}{5}$$

$$\sqrt{x^2} = \sqrt{9}$$

$$x = \pm \sqrt{9}$$

#2

$$5 = (x-3)^2 + 18$$

$$\begin{array}{r} -18 \quad -18 \\ \hline \end{array}$$

$$\sqrt{-13} = (x-3)$$

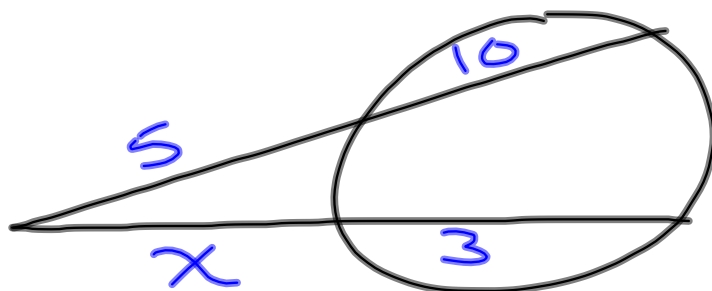
$$\pm \sqrt{-13} = x - 3$$

$$\begin{array}{r} +3 \quad +3 \\ \hline \end{array}$$

$$3 \pm \sqrt{-13} = x$$

$$3 \pm i\sqrt{13} = x$$

Close



$$5(15) = x(x+3)$$

$$75 = x^2 + 3x$$

$$x^2 + 3x - 75 = 0$$

#3

PEMDAS

$$5(x-4)^2 + 8 = 92$$

- 8 - 8

~~$$\frac{5(x-4)^2}{5} = \frac{84}{5}$$~~

$$\sqrt{(x-4)^2} = \pm \sqrt{\frac{84}{5}}$$

$$x-4 = \pm \sqrt{\frac{84}{5}} + 4$$

$$x = 4 \pm \sqrt{\frac{84}{5}}$$

$$\frac{\sqrt{84}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{84} \cdot \sqrt{5}}{\sqrt{5} \cdot \sqrt{5}}$$

$$\frac{\sqrt{84 \cdot 5}}{5}$$

#4

$$12(x-6)^2 - 30 = 2$$

+ 30 + 30

$$\cancel{12}(x-6)^2 = \frac{32 \div 4}{\cancel{12} \div 4}$$

$$(x-6)^2 = \frac{8}{3}$$

$$x-6 = \pm \sqrt{8/3}$$

$$x = 6 \pm \sqrt{8/3}$$

$$x = 6 \pm \sqrt{32/12}$$

$$\textcircled{1} \quad 0 = 7x^2 + 2x$$

$$\textcircled{2} \quad 5x^2 + 7 = 12$$

$$\textcircled{3} \quad 9(x-3)^2 = 27$$

$$\textcircled{4} \quad 5x^2 - 6 = x - 6$$

$$\textcircled{1} \quad 0 = \underbrace{7x^2 + 2x}_x$$

GCF
FACTOR

$$0 = x(7x + 2)$$

$$(x)(7x + 2) = 0$$

$$x = 0 \quad 7x + 2 = 0$$

$$x = -2/7$$

$$\textcircled{2} \quad 5x^2 + 7 = 12$$

$-7 \quad -7$

$$\frac{5x^2}{5} = \frac{5}{5}$$

$$\sqrt{x^2} = \sqrt{1}$$

$$\sqrt{1} = 1$$

$$x = \pm 1$$

$$\textcircled{3} \quad \frac{9(x-3)^2}{9} = \frac{27}{9}$$

$$\sqrt{(x-3)^2} = \pm\sqrt{3}$$

$$x-3 = \pm\sqrt{3}$$

$$x = 3 \pm \sqrt{3}$$

$$\textcircled{4} \quad 5x^2 - 6 = x - 6$$